



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/997,230 | 11/29/2001 | Richard Shann | S01022/80806 | 2536 |
| 23628 | 7590 | 05/24/2004 | EXAMINER | |
| WOLF GREENFIELD & SACKS, PC FEDERAL RESERVE PLAZA 600 ATLANTIC AVENUE BOSTON, MA 02210-2211 | | | DAS, CHAMELI | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2122 | |

DATE MAILED: 05/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 09/997,230 | Applicant(s) SHANN, RICHARD | |
| | Examiner C.DAS | Art Unit 2122 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/29/01.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>5/17/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED DESCRIPTION

1. Claims 1-15 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 11-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Eidt et al, US 6,219,830.

As per claim 11, Eidt discloses:

- ***a source reader for reading said program instructions and directives from the source code*** (col 5, lines 56-61, A PEF container may contain the compiler output from ***a single source code module*** or, if the compiler is able to combine more than one ***source code module***, the output from a plurality of source code modules. Several different containers (PEF or otherwise) may be required to form a complete program”)
- ***a directive translator for generating a compound relocation definition instruction ... relocation instruction*** (col 4, lines 57-63, “ an executable object code file are ***interpreted as relocation instructions*** rather than individual specifications for a particular respective relocatable information item. An abstract machine is provided for interpreting the relocation instructions and

performing various relocation operations and various control functions for the abstract machine, in response to the relocation instructions. The abstract machine maintains certain variables containing information which is referenced and updated in response to certain types of the relocation instructions, thereby obviating the need to include such information as part of each relocation instruction")

- *compound relocation definition instruction defining a compound relocation indicator and the number of instructions in said associated sequence of relocation instructions* (col 12, lines 43-54, " Pointer to the next relocation instruction in the Relocation Table of the loader section of the current PEF container. Initialized to point to the first relocation instruction for the current section number as passed to the PERFORM RELOCATIONS routine 210") and col 13, lines 60-66, " all information items to be relocated are assumed to contain one or more relocatable references, each in the form of a 4-byte virtual address field, and relocation is accomplished by adding the contents of some specified pointer (a pointer to the start of a region in memory or a pointer taken from an import) to the relocatable reference").

As per claim 12, an interoperability flag and selecting means ... relocation instruction (Abstract, lines 4-19)

As per claim 13, Eidt discloses:

- *a relocation generator for generating ... relocation instruction* (col 4, lines 53-60)
- *a counter for counting the number of relocation instruction is said associated sequences* (col 15, lines 64-67, " The loader program of the present embodiment takes advantage of this characteristic by providing a class of relocation instructions which specify a type of relocation (e.g. code, data,

symbol) together with a *count of the number of such relocations* to perform sequentially (i.e. in a "run")).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eidt et al, US 6,219,830 and further in view of Hastings, US 6,618,824.

As per claim 1, Eidt discloses:

- reading a plurality of compound relocation sequence ... relocation instructions
(Eidt, abstract, col 4, lines 55-65, col 9, lines 46-55)
- reading assembler source code ... executing the directive (col 4, lines 53-65,
col 5, lines 50-60)
- determining if said associated sequence or relocation matches ...
instructions (col 10, lines 60-67, col 11, lines 1-4)

Eidt does not specifically disclose inserting into said object code as claimed.

However, Hastings discloses inserting into said object code mode as claimed

(Hastings, abstract, col 4, lines 31-44). The modification would be obvious

because one of the ordinary skill in the art would be motivated to update the object code file efficiently.

As per claim 2, the rejection of claim 1 is incorporated and further Eidt discloses relocation section of the object code module associated with a set of section data, relocation instruction defining an offset indicating ... at link time (Eidt, col 7, lines 33-55, col 14, lines 48-67, col 15, lines 6-24).

For claim 3, (Eidt, col 7, lines 33-55, col 14, lines 48-67, col 15, lines 6-24).

As per claim 4, Eidt discloses the compound relocation definition instruction (Eidt, col 4, lines 55-60). Eidt does not specifically disclose inserting into said object code as claimed. However, Hastings discloses inserting into said object code mode as claimed (Hastings, abstract, col 4, lines 31-44). The modification would be obvious because one of the ordinary skill in the art would be motivated to update the object code file efficiently.

For claim 5, (Eidt, col 12, lines 12-20, col 14, lines 8-15, col 9, lines 60-65, col 13, lines 42-45).

For claim 6, (Eidt, col 5, lines 50-60).

For claim 7, (Eidt, abstract, col 4, lines 53-60).

For claim 8, (Eidt, abstract, col 18, lines 60-65).

As per claim 14, Eidt discloses

- *a store for storing ... source code (col 14, lines 8-12, col 12, lines 17-20)*
- a relocation modifier arrange to detect at least one of a symbol or value in at least one of said relocations instruction ... parameter (col 13, lines 21-24, col

13, lines 60-66, col 14, lines 8-14, col 10, lines 65-67, col 11, lines 1-4). Eidt does not specifically disclose to replace the value as claimed. However, Hastings discloses to replace the value as claimed (Hastings, col 8, lines 29-34, col 11, lines 19-24). The modification would be obvious because one of the ordinary skill in the art would be motivated to generate a relocation instruction efficiently.

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eidt et al, US 6,219,830 and further in view the background section of Eidt

As per claim 15, Eidt discloses:

- source code module... sequence of relocation instructions (Eidt, abstract, col 4, lines 57-60, col 5, lines 56-60, col 12, lines 43-55)
- as assembler ... object code module (Eidt, col 5, lines 50-60). The background section of Eidt discloses a linker for linking ... target executable program (col 1, lines 23-25). The modification would be obvious because one of the ordinary skill in the art would be motivated to create the executable code efficiently.

Allowable Subject Matter

7. Claims 9-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The prior art made or record and not, relied upon is considered pertinent to the applicant's disclosure.

TITLE: Relocation format for linking with relocation instructions containing operations for combining section data, US 6,684,394

TITLE: Relocatable file format and method and apparatus for creating and loading same, US 5764987 A

TITLE: Method for inserting new machine instructions into preexisting machine code to monitor preexisting machine access to memory, US 5335344 A

TITLE: Object code structure and method for translation of architecture independent program implementations, US 6021275 A

TITLE: System for modifying relocatable object code files to monitor accesses to dynamically allocated memory, US 5193180 A.

TITLE: Relocating Machine Instructions by Currying, author: Ramsey, ACM, 1996.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chameli Das whose telephone number is 703-305-1339.

The examiner can normally be reached on Monday-Friday from 7:00 A.M. to 3:30 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Tuan Dam can be reached at 703-305-4552. The fax number for this group is (703) 872-9306.

An inquiry of general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is 703-305-9600.

Chameli C. Das
CHAMELI C. DAS
PRIMARY EXAMINER